

REMARKS

Status of the Claims

Claims 2-31 and 35-49 are now present in this application. Claims 35 and 36 are independent. Claims 1 and 32-34 have been canceled, and claim 35 has been amended. Reconsideration of this application, as amended, is respectfully requested.

The cited references to Greenwood ('617) and to Freeman ('975) discuss different stages of a papermaking process. Greenwood ('617) discusses web forming and Freeman ('975) discusses paper coating. Therefore, a person skilled in the art would not combine these documents.

A paper web is formed, when a dilute stock (also called a furnish), containing about 1 % dry material (roughly half of this dry material being wood fiber and half mineral filler) is filtered through a wire. While wire holes are rather large (about 200 um (micrometers in diameter)), the smallest particles (fine material or fines; a few um to dozens of um) flow through these holes without being retained. Fibers, length 1-3 mm, are easily retained on the wire, and start forming a fiber layer on the wire, which then helps to also further catch the fine material. The portion of retained material on the wire provides the paper machine retention.

The retention of fines is helped by using very high molecular weight cationic water-soluble polymers as a retention agent. Almost all of the modern paper machines use them. They flocculate the fines and attach them onto the fiber surface, thus retaining them together with the fiber.

Good retention and dewatering are seen as good runnability of the paper machine. Bad runnability means that the web brakes, which impairs production efficiency.

The Greenwood ('617) reference discusses this stage of the paper-making process, web forming, where the retention of fines plays an important role. Also, the present invention relates

to web forming. However, the process of the present invention differs clearly from the process of Greenwood, as explained in the previous Response.

After **web forming**, the web is removed from the wire and dried. A dry paper has formed.

For certain paper grades it is important to get an even surface. This is done by **coating** the dry paper by mineral particles, which are a bit more tiny than those used as filler (still they are not yet colloidal). A highly concentrated mineral slurry is used for that function, the concentration of the slurry being typically 60-70 %. The amount of water must be minimized in order to minimize the need for further drying. The slurry, also called coating color, cannot contain too much water, because the water would brake the dry paper, and thus impair the runnability of the coating machine.

The Freeman ('975) reference relates to a coating process of paper.

To be able to use such a high concentration in the coating color, and still get an even, smooth, coating layer on paper, the coating color must have good rheology. This ensures good runnability on the coating machine. There is no such concept as "retention" on a coating machine. While the coating takes place on dried paper, all of the coating pigment particles are retained on the paper surface. Hence, no retention agents are required. Instead, concept "rheology" is very relevant on a coating machine. While there are no difficulties in retention in coating, smaller particles can be used, being optically more active than the filler grade particles. Bigger size helps in retention, but is not optically as efficient.

Though, in web forming, in retention, concept "rheology" has practically no relevancy.

The present invention relates to web forming in the process of manufacturing paper (see page 1, line 13 and page 8, lines 4-6 of the present application). According to the process of the present invention a filler is pretreated with inorganic colloid particles by combining a slurry or a

sol of inorganic colloidal particles and a filler slurry and combining this aqueous slurry of pretreated filler with an aqueous suspension containing cellulose fibers to form a stock. The formed stock is treated with a cationic retention agent which is a cationic polymer having a molecular weight of at least 500,000 g/mol. The treated stock is filtered to form a web and the web is dried to form paper.

The Freeman method does not concern web forming, but it is concerned with the coating of paper. Therefore, the process of Freeman and the present process can not be compared. For the same reason, a person skilled in the art cannot start from a paper coating process (Freeman), and add a step from a web forming process (Greenwood) and come to a new web forming process (the present invention).

In order to make more clear that the present invention is concerned with a different process than that of Freeman, independent claims 35 and 36 have been amended in this regard. It is respectfully submitted that the claims herein define a process or method that is distinctly different from that taught in the cited references, whether considered alone or in combination. In addition, such distinctions also serve to clarify the differences discussed in the Advisory Office Action of October 29, 2009. Therefore, it is believed that the claims are now in condition for allowance. Favorable action in this regard is requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart, Registration

No. 21066 at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

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